

## ABSTRACT

Charles University in Prague

Faculty of pharmacy in Hradec Králové

Department of pharmacognosy

Student: Kateřina Šandová

Supervisor: PharmDr. Marie Kašparová, PhD.

Title of diploma thesis: Plant tissue cultures as a potential source of phenylpropanoids II.

This diploma thesis deals with the monitoring of jasmonic acid biotic elicitation impact on the production of podophyllotoxin in *Juniperus virginiana* suspension culture. The monitoring was carried out in two varieties of *J. virginiana*: var. 'Glaucá' (7th and 19th passage) and var. 'Hetzii' (7th passage).

The elicitation of the suspension culture was performed in 4 jasmonic acid concentrations: 0.005 mmol/l, 0.05 mmol/l, 0.5 mmol/l, 5 mmol/l. Samples were taken after 6, 24, 48 and 168 hours of elicitation. The best podophyllotoxin production increase was observed in the suspension culture of *Juniperus virginiana* var. 'Glaucá' (7th passage). To achieve this result, the concentration of elicitor was 5 mmol/l and elicitor was applied for 168 hours. The podophyllotoxin production percentage was 0.067% and production increased by 179% over the control.

Keywords: *Juniperus virginiana*, suspension cultures, podophyllotoxin, elicitation